ER Site No. 65: Lurance Canyon Explosive Test Site

ADS: 1333
Operable Unit: Canyons Test Area

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Site History

ER Site 65 is identified by the HSWA Module as the Lurance Canyon Explosive Test Site. The site is situated on the canyon-floor alluvium in the upper reaches of the Lurance Canyon drainage. The canyon is surrounded by moderately steep, sloping canyon walls. The immediate topographic relief around the site is over 500 ft. A 25- to 50-ft wide road is cut on the hillslopes as a firebreak and encircles the site. The canyon floor at the site is isolated by the canyon walls, except for the western drainage of the Arroyo del Coyote. Coyote Springs Road follows this drainage and is the main access into Lurance Canyon.

The location of ER Site 65 is coincident with ER Site 94, 12, and 13. ER Site 65 was used from the late 1960s to the early 1980s for general explosives tests. Due to the overlap in location and periods of testing at ER Sites 65 and 94, the criteria below were used to determine the types of operational tests and test structures to include in the descriptions of each ER site.

ER Site 65 includes all operations or testing that involved general explosives tests, early burn tests that involved the excavation of pits into soil and sediment, miscellaneous (non-petroleum fuel-fire) burn tests, cone tests, a Torch Activated Burn System (TABS) test location, and slow-heat tests. ER Site 94 includes all burn tests involving portable pans and fixed-location structures or engineered burn units. A TABS test location also exists in ER Site 94.

Interviews with past SNL/NM personnel and historical aerial photographs have been used to reconstruct past operations at ER Site 65. Aerial photographs indicate that construction of ER Site 65 had begun by October 1967. It was established as an explosives test area designed with a 10,000-ft dispersion radius to provide a buffer for open detonations of up to 10,000 lb of HE. The test site was in full operation by 1971 and several structures were visible. A firebreak road

was constructed around the site between 1967 and mid-1971 to protect the surrounding area from accidental fires caused by detonation of explosives or burn testing.

Bunker 9830, also visible in the 1971 historical aerial photograph, is located in the northwest portion of ER Site 65. It was originally intended to house instrumentation trailers for site activities. Instrumentation trailers for ER Site 94 are presently stationed outside the bunker. The bunker was reported to be the control point for explosives tests as well as a shelter for staff during burn tests involving explosive materials. The eastern half of Bunker 9830 was also used for burn tests on nuclear reactor control cables and fire suppressant tests.

The 1971 historical aerial photograph also shows a shallow depression that is located approximately 200 ft south of Bunker 9830. This depression served as part of a foundation for a camera bunker that was constructed after 1971. The camera bunker is reported to have been used to record large HE explosions that were detonated to the immediate area east of the bunker. The camera bunker is currently part of ER Site 94.

All open detonation explosives tests were concluded by the early 1980s. The frequency of testing from 1968 to 1980 has been estimated at approximately 20 tests per year. Based on information provided in the interviews, open detonation explosives tests were conducted within the primary and secondary detonation areas.

In addition to open detonation explosives tests, fuel-fire burn tests of test units containing explosives were conducted at ER Site 65 using excavated pits from 1969 to 1979. Portable pans and engineered burn structures completely replaced burn pit tests by 1979. From the mid-1970s, a variety of nonpetroleum-fuel-fire burn tests were conducted. These tests included slow-heat detonations, TABS tests, rocket propellant burn tests, liquid oxygen torch tests, and wood crib fire tests. Small explosive tests were also conducted in the CON-CON Unit in 1982.

Bunker 9830, the camera bunker, the Bomb Burner Unit trench, a small debris mound, and a fire break periphery road are the only remaining features associated with Lurance Canyon Explosive Test Site activities. The CON-CON Unit was removed in 1988 and the SMERF was constructed on its site.

Based on the location of the detonations and the types of tests conducted at ER Site 65, the site has been divided into five sub-units:
ER Site 65A - Small Debris Mound
The Small Debris Mound covers an area of less than 0.l acre on the southeast rim of the Oil Surface Impoundment (ER Site 13). This small mound contained soil, limestone blocks, and concrete rubble and may have been the location of a propagation test. Two interview records identified the small debris mound as a small concrete bunker covered with soil and two records speculated that the propagation test took place there.

ER Site 65B - Primary Detonation Area

ER Site 65B covers approximately 3.3 acres of the western portion of ER Site 65. The boundaries of this sub-unit were defined by historical aerial photographs and interview records.

The site was the detonation area for general explosives tests, miscellaneous burn tests, slow-heat tests, and a TABS test.

ER Site 65C - Secondary Detonation Area

The Secondary Detonation Area lies on approximately 1.3 acres, north of the Oil Surface Impoundment. The boundaries of the site were defined by historical aerial photographs and test reports. The site was the burn pit area for the Cloudmaker tests, other ammonium nitrate burn tests involving fuel-rod containers, liquid fuel fire, and solid rocket propellant burn tests on Pioneer capsules, plutonium shipping container tests, and the TC-708 emergency denial device test.

ER Site 65D - Near Field Dispersion Area

Miscellaneous burn tests, cone tests, and slow-heat tests were conducted at the Near Field Dispersion Area, which covers approximately 8.0 acres. The area is considered a dispersion area for general explosives test activities conducted at ER Sites 65B and 65C. A radiation survey that was performed included a 100-percent surface coverage of the site.

ER Site 65E - Far Field Dispersion Area

The Far Field Dispersion Area covers approximately 76.9 acres. No documented tests were conducted in this area, but it is considered a dispersion area for general explosives testing activities that took place at ER Sites 65B and 65C.

A radiation survey that was performed included a 70-percent surface coverage (10-ft grid) of this site.

Constituents of Concern

HE
Metals
Radionuclides
SVOCs
VOCs

Current Hazards

There are no current hazards at this site related to contamination of the surface soils. However, due to past testing activities at the site there is the potential for depleted uranium to exist. Therefore, any excavation activities at the site are potentially hazardous.

Current Status of Work

An RFI Work Plan was submitted for regulatory approval in January 1996. A surface radiation VCM of Sites 12, 13, 65, and 94 was completed in May 1996. A Request for Supplemental Information (RSI) for the work plan was received from NMED in August 1997, and a response

was subsequently submitted to the NMED. A notice of deficieny (NOD) for the work plan was received in April 1998 and a response was subsequently submitted to the NMED.

Samples for all of the areas associated with ER Site 65 testing activities were collected according to the work plan, as ammended by the RSI, in March and April 1998, or earlier. Initial sampling at ER Site 65A, Small Debris Mound, uncovered an intact storage bunker. The soil and debris contents of this bunker were sampled in April 1998, and the bunker was demolished and disposed of as non-regulated waste.

A risk-based No Further Action (NFA) proposal was submitted to NMED for Site 65E in September 1998. In December 1999, following review of SNLs response to a Request for Supplemental Information (RSI), NMED indicated that the site was acceptable for NFA.

An NFA proposal was submitted to NMED for Site 65D in September 1998. Site 65D was found acceptable for NFA petition in September 1999.

NFA proposals for Sites 65A, B and C were submitted to NMED in September 1999. In March 2000 NMED found Sites 65 A, B and C to be acceptable for NFA petition. The NFA for 65E was approved by NMED in July 2000 after completing the public review and permit modification process. The NFAs for 65A, 65B, 65C, and 65D were approved by NMED in October 2000 after completing the public review and permit modification process.

Future Work Planned

No further work is planned at Site 65.

Waste Volume Estimated/Generated

A combined surface radiation VCM for Sites 12, 13, 65, and 94 has generated 200 drums of radioactive waste. Approximately 100 cubic yards of non-regulated waste were generated and disposed of during the demolition of the Site 65A bunker.

Information for ER Site 65 was last updated Feb 17, 2003.